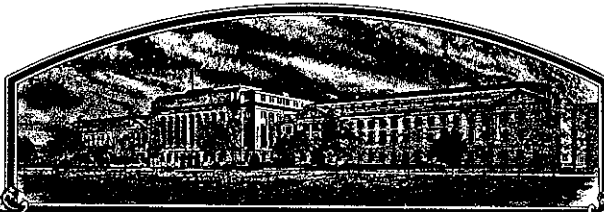


No.

8900218



# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

## Asgrow Seed Company

Whereas, THERE HAS BEEN PRESENTED TO THE  
Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT (U.S.C. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'A1929'

In Testimony Whereof, I have hereunto set  
my hand and caused the seal of the Plant  
Variety Protection Office to be affixed  
at the City of Washington, D. C.  
this 28th day of June in  
the year of our Lord one thousand nine  
hundred and ninety-one.

Attest:

*Kenneth A. Evans*

Commissioner

Plant Variety Protection Office  
Agricultural Marketing Service

*Ed Madigan*  
Secretary of Agriculture


U.S. DEPARTMENT OF AGRICULTURE  
AGRICULTURAL MARKETING SERVICE

FORM APPROVED: OMB NO. 0581-0055

## APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is to be held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) Asgrow Seed company		2. TEMPORARY DESIGNATION	3. VARIETY NAME A1929
4. ADDRESS (Street and No. or R.F.D. No., City, State, and Zip Code) 9620-190-25 Gull Road, Building 190 Kalamazoo, Michigan 49001		5. PHONE (Include area code) 616-385-6605	FOR OFFICIAL USE ONLY VPVO NUMBER 8900218
6. GENUS AND SPECIES NAME Glycine max	7. FAMILY NAME (Botanical) Leguminosae		FILING DATE May 11, 1989 TIME <input type="checkbox"/> A.M. <input type="checkbox"/> P.M.
8. KIND NAME Soybean	9. DATE OF DETERMINATION September, 1985		FEES RECEIVED AMOUNT FOR FILING \$ 2150. DATE May 4, 1989 AMOUNT FOR CERTIFICATE \$ 250. DATE June 13, 1991
10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION (Corporation, partnership, association, etc.) Corporation		12. DATE OF INCORPORATION March 22, 1968	
11. IF INCORPORATED, GIVE STATE OF INCORPORATION Delaware		13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS <del>John A. Bateha 9620-190-25</del> Gary E. Starwalt, Agronomic Business Development Asgrow Seed company and International Marketing Service Director <del>Gull Road, Building 190</del> 7000 Portage Rd., Kalamazoo, MI 49001 Kalamazoo, Michigan 49001 PHONE (Include area code): 616-385-6605 JES 1 July 1991	
14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED			
a. <input checked="" type="checkbox"/> Exhibit A, Origin and Breeding History of the Variety (See Section 52 of the Plant Variety Protection Act.) b. <input checked="" type="checkbox"/> Exhibit B, Novelty Statement. c. <input checked="" type="checkbox"/> Exhibit C, Objective Description of Variety (Request form from Plant Variety Protection Office.) d. <input checked="" type="checkbox"/> Exhibit D, Additional Description of Variety. e. <input checked="" type="checkbox"/> Exhibit E, Statement of the Basis of Applicant's Ownership.			
15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? (See Section 83(a) of the Plant Variety Protection Act.) <input type="checkbox"/> Yes (If "Yes," answer items 16 and 17 below) <input checked="" type="checkbox"/> No			
16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED? <input type="checkbox"/> Foundation <input type="checkbox"/> Registered <input type="checkbox"/> Certified	
18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.? <input type="checkbox"/> Yes (If "Yes," give date) <input checked="" type="checkbox"/> No			
19. HAS THE VARIETY BEEN RELEASED, OFFERED FOR SALE, OR MARKETING IN THE U.S. OR OTHER COUNTRIES? <input type="checkbox"/> Yes (If "Yes," give names of countries and dates) <input checked="" type="checkbox"/> No			
20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable. The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act. Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.			
SIGNATURE OF APPLICANT 		DATE 4-28-89	
SIGNATURE OF APPLICANT		DATE	

Asgrow Seed Company  
PVP Application A1929 Soybean

April 28, 1989

EXHIBIT A

ORIGIN AND BREEDING HISTORY OF A1929

Pedigree: (Pride B216\*Hodgson)/2/\*A3127/3/Williams 82

1982 Made backcross to (Pride B216\*Hodgson) line using F<sub>1</sub> plants resistant to race 4 of *Phytophthora megasperma* f.sp. *glycinea* (Pmg).

1983 Grew BC<sub>1</sub>F<sub>1</sub> plants at Redwood Falls, Minnesota.

1984 Grew BC<sub>1</sub>F<sub>2</sub> pop'n at Redwood Falls, Minnesota. Selected 192 BC<sub>1</sub>F<sub>2</sub> plants resistant to race 3 of Pmg.

1985 Grew 192 BC<sub>1</sub>F<sub>2</sub>-derived progeny rows at Redwood Falls, Minnesota. Selected 47 progeny rows from this cross in September, 1985. One of these progeny rows was GH831611 A85-11029 and it was harvested in bulk. The seeds were checked and verified for uniform seed coat luster and hilum color.

It was in September, 1985, that GH831611 A85-11029 was determined to be a stable and unique line.

1986 GH831611 A85-11029 was entered into the 86P109 as Entry 29 which was grown at Redwood falls, Morgan and Stewart, Minnesota. It produced uniform stands and was selected for its high yield and excellent standability. 100 single BC<sub>1</sub>F<sub>4</sub> plants were pulled from border rows at Redwood Falls.

1987 GH831611 A85-11029 was entered into the 87V150 as Entry 14 which was grown at 12 locations over 4 states. The line was named X1929. BC<sub>1</sub>F<sub>4</sub> pure rows were grown at Redwood Falls and 10 rows were selected for uniformity and bulked to form breeder seed of 15.6 pounds. This seed was planted in Puerto Rico in October, 1987, for a 2-generation winter increase.

1988 X1929 was entered into the 88V150 as Entry 7 which was grown at 15 locations over 7 states.

A 90 acre field of X1929 was grown at Perry, Iowa.

X1929 was nominated for release and full production and assigned the designation, A1929.

Yield trial evaluations in 1986, 1987 and 1988 and seed production in 1988 indicate that A1929 is uniform and stable. As with other soybean varieties, variants can occur for almost any character during the course of repeated sexual production.

Asgrow Seed company  
 PVP Application A1929 Soybean  
 April 28, 1989

EXHIBIT B

NOVELTY STATEMENT CONCERNING A1929 SOYBEAN

To our knowledge the soybean varieties that most closely resemble A1929 are Hodgson 78, Sibley, Hardin, BSR101, A1525 and A1937.

1. Flower Color:
  - A1929 = Purple
  - Hodgson 78 = Purple
  - Sibley = White
  - Hardin = Purple
  - BSR101 = Purple
  - A1525 = Purple
  - A1937 = Purple
2. Plant Pubescence Color:
  - A1929 = Gray
  - Hodgson 78 = Gray
  - Sibley = Gray
  - Hardin = Gray
  - BSR101 = Gray
  - A1525 = Gray
  - A1937 = Tawny
3. Pod Wall Color:
  - A1929 = Brown
  - Hodgson 78 = Brown
  - Sibley = Brown
  - Hardin = Brown
  - BSR101 = Tan
  - A1525 = Tan
  - A1937 = Brown
4. Hilum Color:
  - A1929 = Imperfect Black
  - Hodgson 78 = Buff
  - Sibley = Yellow
  - Hardin = Yellow
  - BSR101 = Imperfect Black
  - A1525 = Yellow
  - A1937 = Buff

5. Reaction to Races of Phytophthora megasperma f. sp. glycinea:

	Race													
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>13</u>	<u>16</u>	<u>17</u>	<u>21</u>	<u>25</u>	
A1929	R	R	R	R	R	R	R	R	R	S	R	R	S	
Hodgson78R	R	R	S	S	S	S	S	S	R	S	R	R	S	
Sibley	R	R	S	S	S	S	S	S	R	S	R	R	S	
Hardin	R	R	S	S	S	S	S	S	R	S	R	R	S	
BSR101	R	R	S	S	S	S	S	S	R	S	R	R	S	
A1525	R	R	S	S	S	S	S	S	R	S	R	R	S	
A1937	R	R	S	S	S	S	S	S	R	S	R	R	S	

U.S. DEPARTMENT OF AGRICULTURE  
 AGRICULTURAL MARKETING SERVICE  
 LIVESTOCK, MEAT, GRAIN & SEED DIVISION  
 PLANT VARIETY PROTECTION OFFICE  
 BELTSVILLE, MARYLAND 20705

EXHIBIT C  
 (Soybean)

OBJECTIVE DESCRIPTION OF VARIETY  
 SOYBEAN (*Glycine max* L.)

NAME OF APPLICANT(S) Asgrow Seed Company	TEMPORARY DESIGNATION	VARIETY NAME A1929
ADDRESS (Street and No., or R.F.D. No., City, State, and Zip Code) 9620-190-25 Gull Road, Building 190 Kalamazoo, Michigan 49001		FOR OFFICIAL USE ONLY PVPO NUMBER 8900218

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., ). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:



1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)  
 3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)

2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)  
 4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ 2. SEED COAT COLOR: (Mature Seed)

1 = Yellow      2 = Green      3 = Brown      4 = Black      5 = Other (Specify) \_\_\_\_\_

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

1 = Dull ('Corsoy 79'; 'Braxton')      2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ 4. SEED SIZE: (Mature Seed)

Grams per 100 seeds

★ 5. HILUM COLOR: (Mature Seed)

1 = Buff      2 = Yellow      3 = Brown      4 = Gray      5 = Imperfect Black      6 = Black      7 = Other (Specify) \_\_\_\_\_

★ 6. COTYLEDON COLOR: (Mature Seed)

1 = Yellow      2 = Green

★ 7. SEED PROTEIN PEROXIDASE ACTIVITY:

1 = Low      2 = High

★ 8. SEED PROTEIN ELECTROPHORETIC BAND:

1 = Type A (SP1<sup>a</sup>)      2 = Type B (SP1<sup>b</sup>)

★ 9. HYPOCOTYL COLOR:

1 = Green only ('Evans'; 'Davis')      2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')  
 3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')  
 4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ 10. LEAFLET SHAPE:

1 = Lanceolate      2 = Oval      3 = Ovate      4 = Other (Specify) \_\_\_\_\_

## 11. LEAFLET SIZE:

☐ 21 = Small ('Amsoy 71'; 'A5312')  
3 = Large ('Crawford'; 'Tracy')

2 = Medium ('Corsoy 79'; 'Gasoy 17')

## 12. LEAF COLOR:

☐ 21 = Light Green ('Weber'; 'York')  
3 = Dark Green ('Gnome'; 'Tracy')

2 = Medium Green ('Corsoy 79'; 'Braxton')

## ★ 13. FLOWER COLOR:

☐ 2

1 = White

2 = Purple

3 = White with purple throat

## ★ 14. POD COLOR:

☐ 2

1 = Tan

2 = Brown

3 = Black

## ★ 15. PLANT PUBESCENCE COLOR:

☐ 1

1 = Gray

2 = Brown (Tawny)

## 16. PLANT TYPES:

☐ 21 = Slender ('Essex'; 'Amsoy 71')  
3 = Bushy ('Gnome'; 'Govan')

2 = Intermediate ('Amcor'; 'Braxton')

## ★ 17. PLANT HABIT:

☐ 3

1 = Determinate ('Gnome'; 'Braxton')

2 = Semi-Determinate ('Will')

3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

## ★ 18. MATURITY GROUP:

☐ 0 ☐ 41 = 000  
9 = VI2 = 00  
10 = VII3 = 0  
11 = VIII4 = I  
12 = IX5 = II  
13 = X

6 = III

7 = IV

8 = V

## ★ 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

## BACTERIAL DISEASES:

★ ☐ 0Bacterial Pustule (*Xanthomonas phaseoli* var. *sojensis*)★ ☐ 0Bacterial Blight (*Pseudomonas glycinea*)★ ☐ 0Wildfire (*Pseudomonas tabaci*)

## FUNGAL DISEASES:

★ ☐ 0Brown Spot (*Septoria glycines*)Frogeye Leaf Spot (*Cercospora sojina*)★ ☐ 0

Race 1

☐

Race 2

☐

Race 3

☐

Race 4

☐

Race 5

☐

Other (Specify)

☐ 0Target Spot (*Corynespora cassiicola*)☐ 0Downy Mildew (*Peronospora trifoliorum* var. *manshurica*)☐ 1Powdery Mildew (*Microsphaera diffusa*)★ ☐ 1Brown Stem Rot (*Cephalosporium gregatum*)☐ 0Stem Canker (*Diaporthe phaseolorum* var. *caulivora*)

## 19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

## FUNGAL DISEASES: (Continued)

- ★ ☐ 0 Pod and Stem Blight (*Diaporthe phaseolorum* var. *sojae*)
- ☐ 0 Purple Seed Stain (*Cercospora kikuchii*)
- ☐ 0 Rhizoctonia Root Rot (*Rhizoctonia solani*)
- Phytophthora Rot (*Phytophthora megasperma* var. *sojae*)
- ★ ☐ 2 Race 1 ☐ 2 Race 2 ☐ 2 Race 3 ☐ 2 Race 4 ☐ 2 Race 5 ☐ 0 Race 6 ☐ 2 Race 7
- ☐ 2 Race 8 ☐ 2 Race 9 ☐ 2 Other (Specify) Race 13, 17, 21

## VIRAL DISEASES:

- ☐ 0 Bud Blight (Tobacco Ringspot Virus)
- ☐ 0 Yellow Mosaic (Bean Yellow Mosaic Virus)
- ★ ☐ 0 Cowpea Mosaic (Cowpea Chlorotic Virus)
- ☐ 0 Pod Mottle (Bean Pod Mottle Virus)
- ★ ☐ 0 Seed Mottle (Soybean Mosaic Virus)

## NEMATODE DISEASES:

- Soybean Cyst Nematode (*Heterodera glycines*)
- ★ ☐ 1 Race 1 ☐ 1 Race 2 ☐ 1 Race 3 ☐ 1 Race 4 ☐ Other (Specify)
- ☐ 0 Lance Nematode (*Hoplolaimus Colombus*)
- ★ ☐ 0 Southern Root Knot Nematode (*Meloidogyne incognita*)
- ★ ☐ 0 Northern Root Knot Nematode (*Meloidogyne Hapla*)
- ☐ 0 Peanut Root Knot Nematode (*Meloidogyne arenaria*)
- ☐ 0 Reniform Nematode (*Rotylenchulus reniformis*)
- ☐ OTHER DISEASE NOT ON FORM (Specify):

## 20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ★ ☐ 1 Iron Chlorosis on Calcareous Soil
- ☐ Other (Specify)

## 21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

- ☐ 0 Mexican Bean Beetle (*Epilachna varivestis*)
- ☐ 0 Potato Leaf Hopper (*Empoasca fabae*)
- ☐ Other (Specify)

## 22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	Hardin	Seed Coat Luster	Hardin
Leaf Shape	Hardin	Seed Size	Hodgson 78
Leaf Color	Hardin	Seed Shape	Hardin
Leaf Size	Hardin	Seedling Pigmentation	Hardin

## 23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/POD
				CM Width	CM Length	% Protein	% Oil		
A1929 Submitted	125	1.5	85	8.1	11.9	40.5	22.8	16.0	2.6
Hardin Name of Similar Variety	126	3.2	95	7.8	11.5	40.8	22.9	14.5	2.8

## PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBT1-A<sub>2</sub> in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 1-19.

Data from 1987-88 Asgrow V150 trial, except seed data from 1988 Asgrow V150 trial.



8900218

Asgrow Seed Company  
PVP Application A1929 Soybean  
April 28, 1989

EXHIBIT D

ADDITIONAL DESCRIPTION OF THE VARIETY

A1929 is a late maturity Group I cultivar that possesses an outstanding combination of characters needed by producers in its maturity zone. It combines high yield potential, excellent standability, very good emergence, and resistance to many races of Phytophthora megasperma f. sp. glycinea conferred by the  $Rps_1^k$  alleles.

Asgrow Seed Company  
PVP Application A1929 Soybean  
April 28, 1989

8900218

EXHIBIT E

STATEMENT OF THE BASIS OF APPLICANT'S OWNERSHIP

A1929 was originated and developed by Alan K. Walker, Asgrow Plant Breeder. By agreement between employee and Asgrow Seed Company, all rights to any invention, discovery, or development made by an employee are assigned to the Company. No rights to such invention, discovery, or development are retained by the employee.